





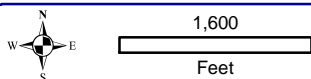
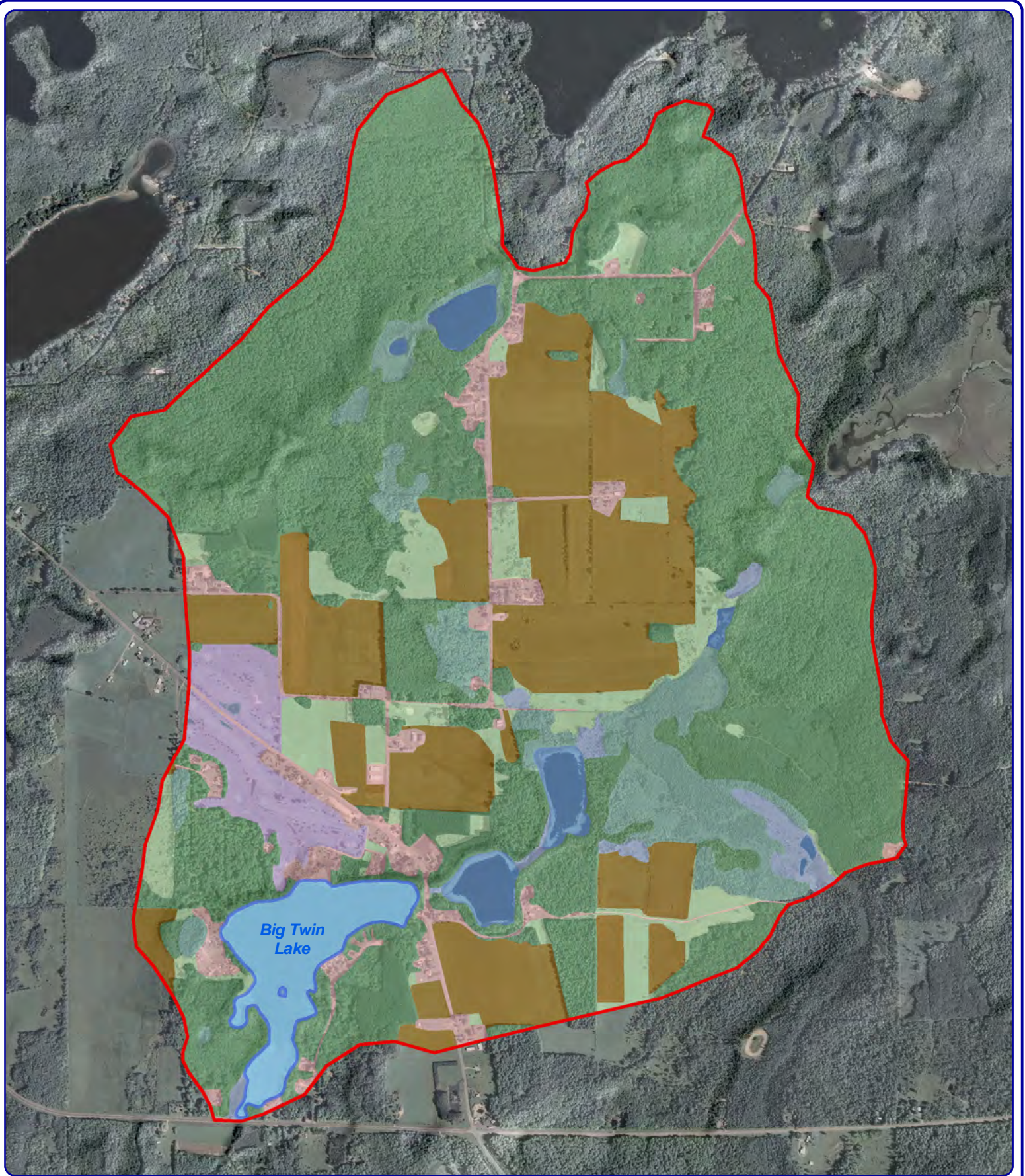
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 Lake Management Planning  
 815 Prosper Road  
 De Pere, WI 54115  
 920.338.8860  
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Sources:  
 Roads and Hydro: WDNR  
 Map Date: August 2, 2013  
 Filename: Map1\_BigTwin\_Location.mxd

**Legend**

-  Big Twin Lake ~60 acres  
WDNR Definition
-  Point-Intercept Survey Location  
30-meter spacing, 287 total points
-  Water Quality  
Sampling Location
-  Carry-in Access

**Map 1**  
**Big Twin Lake**  
 Langlade County, Wisconsin  
**Project Location  
 & Lake Boundaries**



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Source:  
 Watershed: WDNR & Onterra  
 Landcover: NLCD 2006  
 Hydroshad: WDNR  
 Orthophotography: NAIP, 2010  
 Map Date: July 11, 2013  
 File Name: Map2\_BigTwin\_WS.mxd



Project Location in Wisconsin

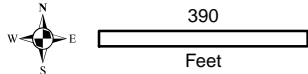
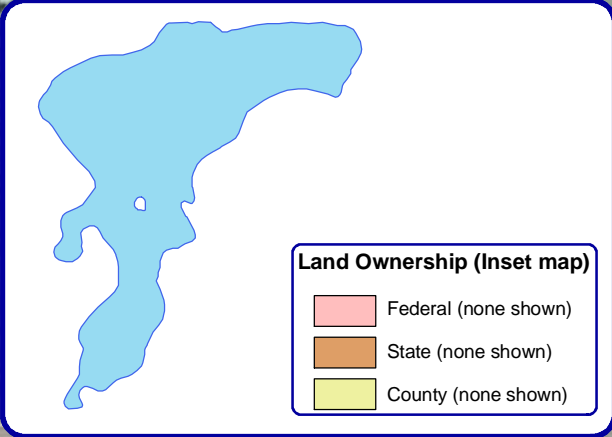
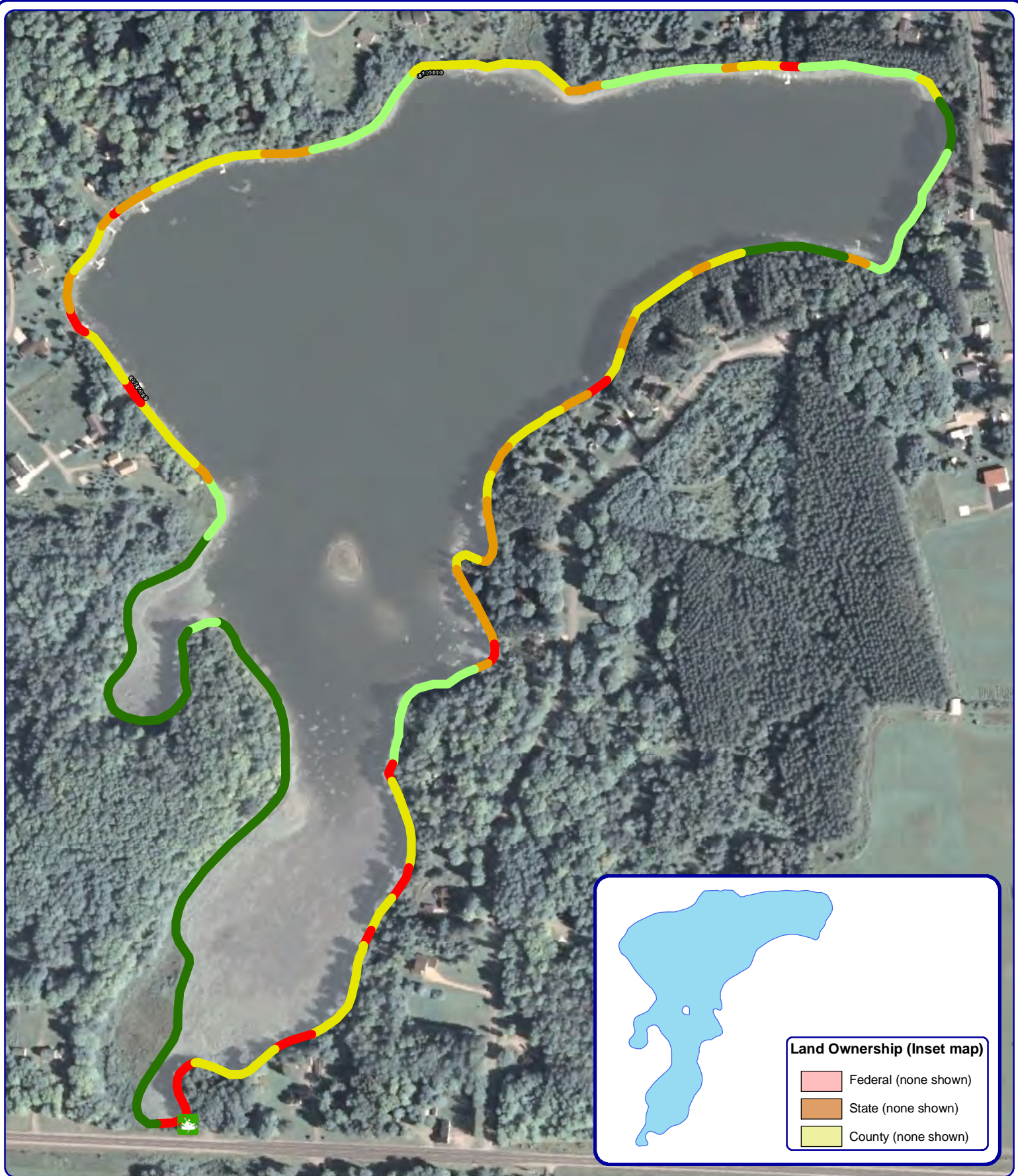
**Legend**

Big Twin Lake Watershed

**Land Cover Types**

- Forest
- Forested Wetlands
- Wetlands
- Open Water
- Golf Course
- Pasture/Grass
- Row Crops
- Rural Residential

**Map 2**  
**Big Twin Lake**  
 Langlade County, Wisconsin  
**Watershed and**  
**Land Cover Types**



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Sources:  
 Roads and Hydro: WDNR  
 Map Date: August 2, 2013  
 Filename: Map3\_BigTwin\_SC.mxd

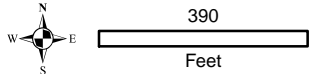
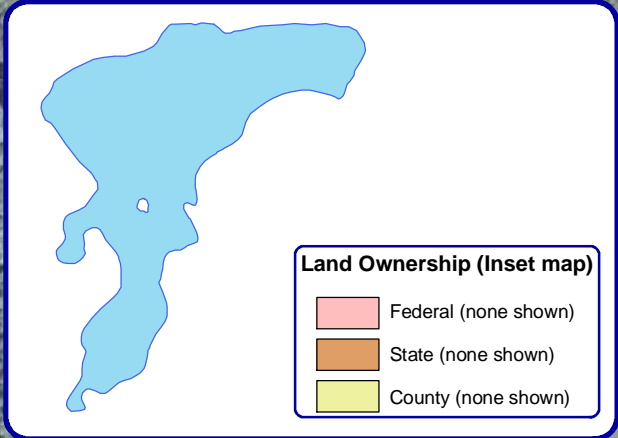
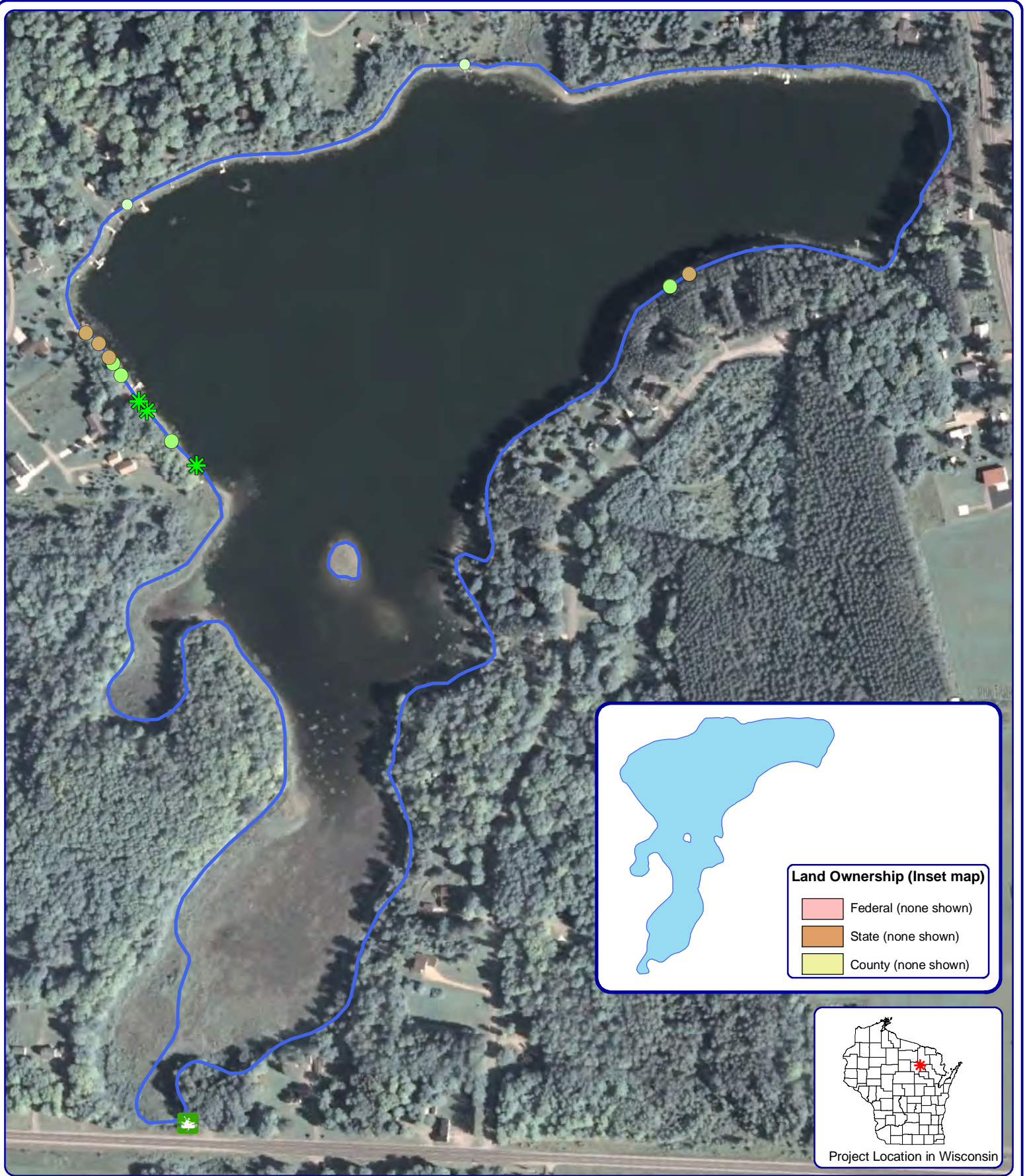


Project Location in Wisconsin

- Legend**
- Natural/Undeveloped
  - Developed-Natural
  - Developed-Semi-Natural
  - Developed-Unnatural
  - Urbanized

- Seawall
- Rip-Rap

**Map 3**  
**Big Twin Lake**  
 Langlade County, Wisconsin  
**2012 Shoreland**  
**Condition**



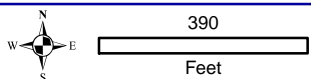
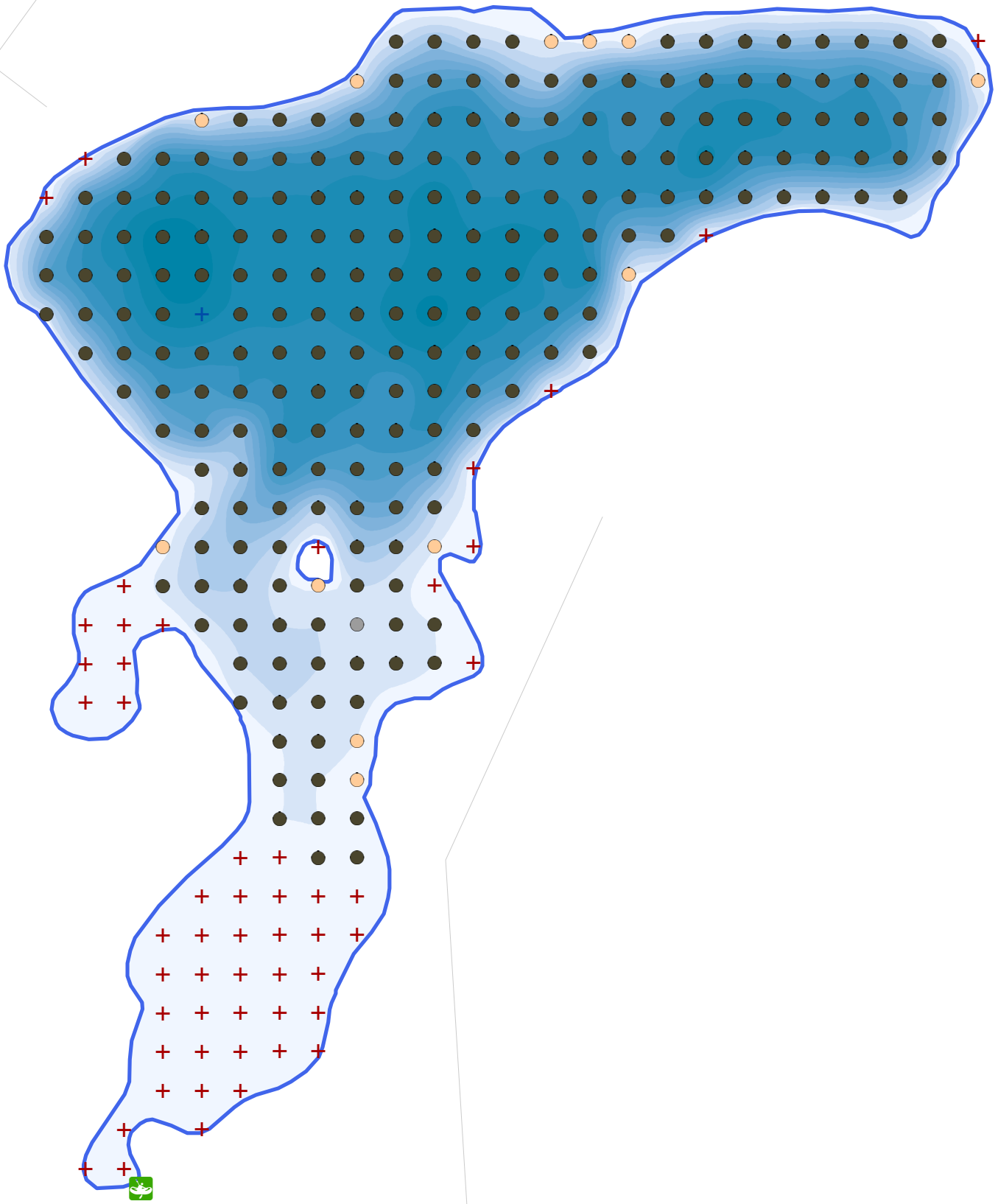
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Sources:  
 Roads and Hydro: WDNR  
 Map Date: August 2, 2013  
 Filename: Map4\_BigTwin\_CWH.mxd

**Legend**

- 2-8 Inches, No Branches (none)
- 2-8 Inches, Minimal Branches
- 2-8 Inches, Moderate Branches (none)
- 2-8 Inches, Full Canopy (none)
- >8 Inches, No Branches
- >8 Inches, Minimal Branches
- >8 Inches, Moderate Branches (none)
- >8 Inches, Full Canopy (none)
- Cluster

**Map 4**  
**Big Twin Lake**  
 Langlade County, Wisconsin  
**Course Woody**  
**Habitat**



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Sources:  
 Roads and Hydro: WDNR  
 PI Survey: WDNR, 2011  
 Map Date: August 2, 2013  
 Filename: Map5\_BigTwin\_Sediment.mxd



Project Location in Wisconsin

**Legend**

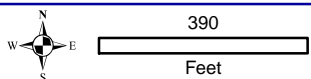
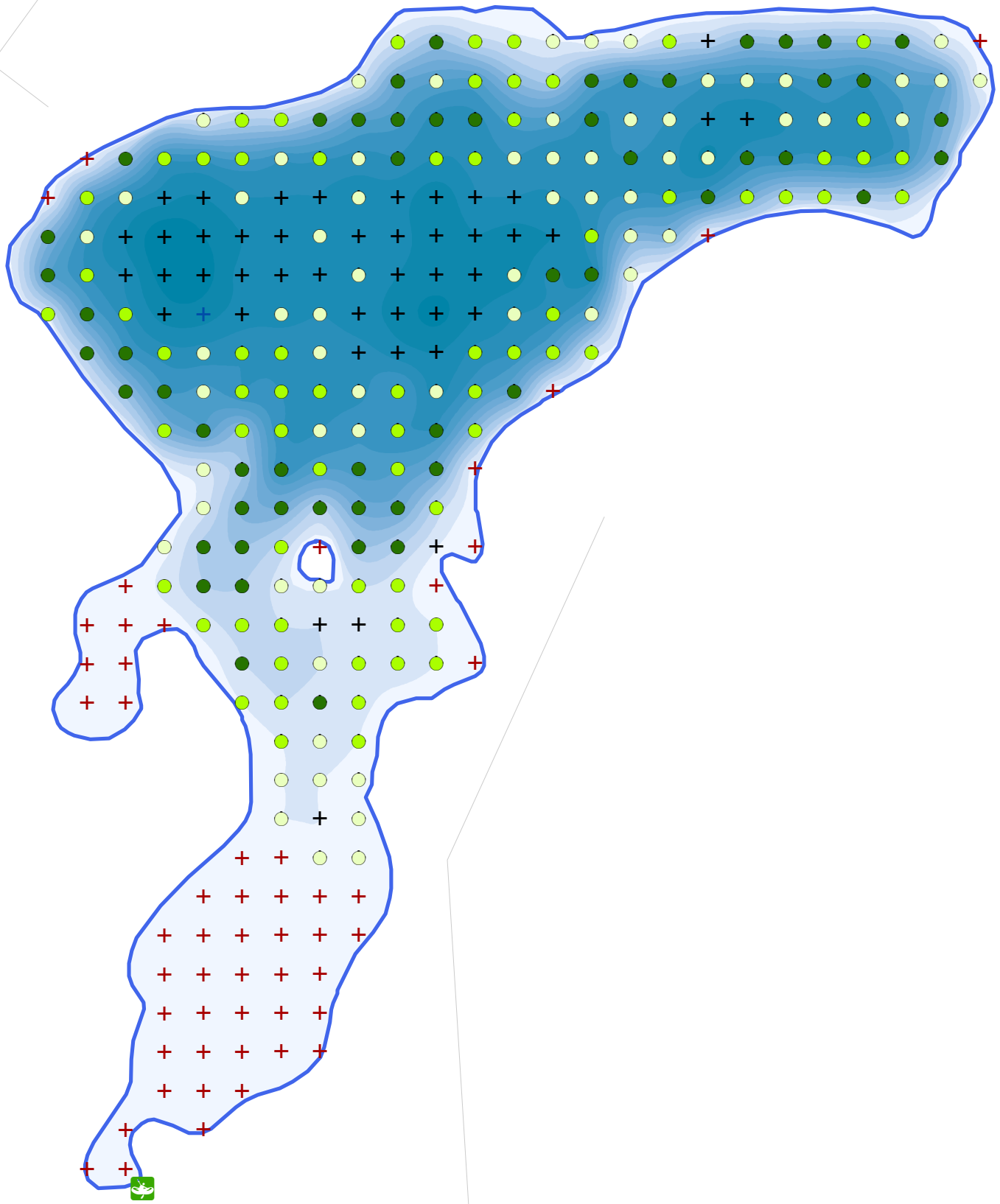
**2011 Point-intercept Survey**

- Soft Sediments
- Rock
- Sand
- + Too Deep - No Data
- + Non-navigable

**Map 5**

**Big Twin Lake**  
 Langlade County, Wisconsin

**2011 PI Survey:  
 Sediment Types**



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Sources:  
 Roads and Hydro: WDNR  
 PI Survey: WDNR, 2011  
 Map Date: August 2, 2013  
 Filename: Map5\_BigTwin\_Sediment.mxd



Project Location in Wisconsin

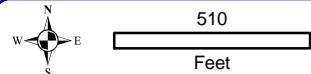
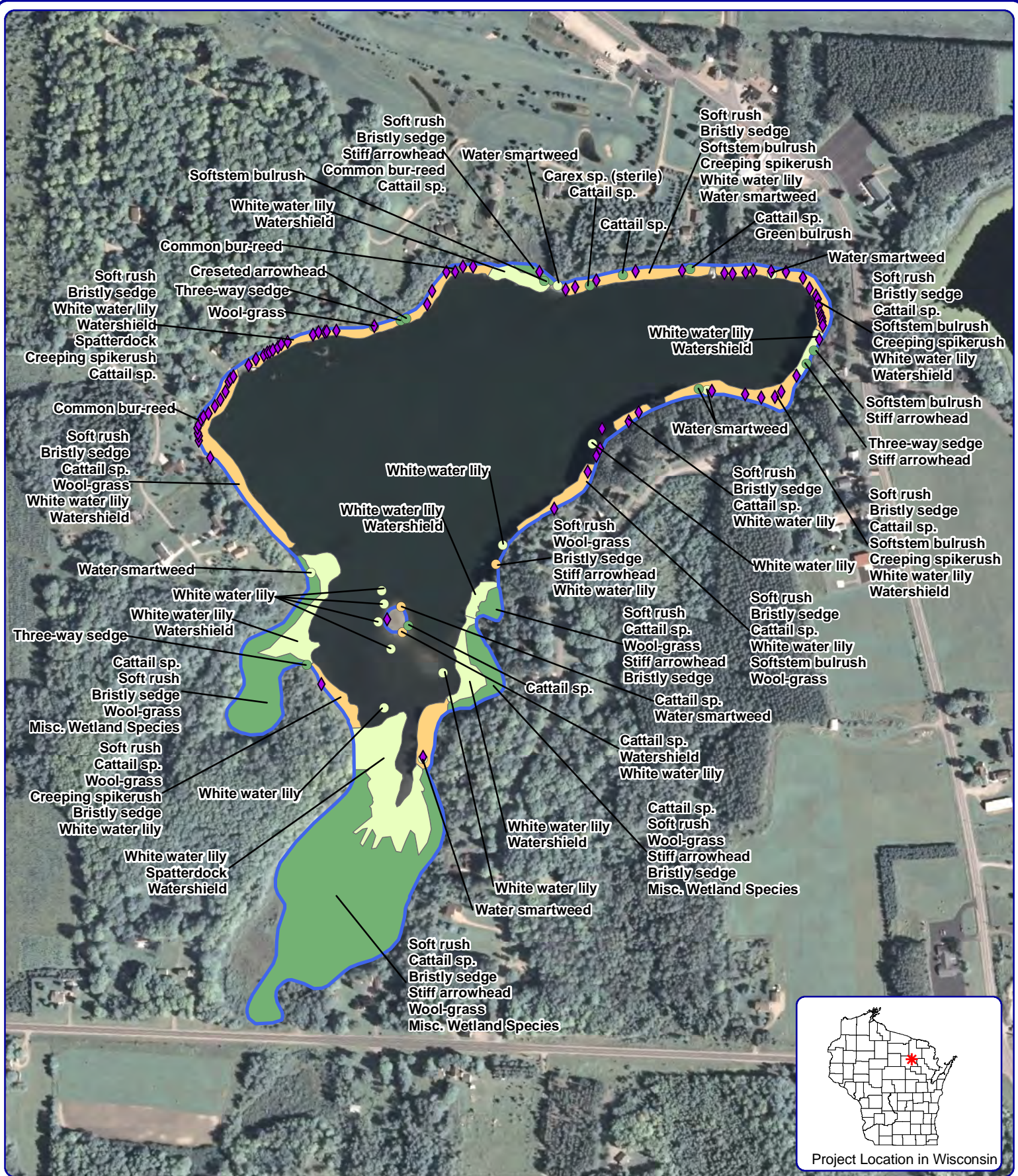
**Legend**

**2011 Point-intercept Survey**

- Total Rake Fullness = 1
- Total Rake Fullness = 2
- Total Rake Fullness = 3
- + No Vegetation
- + Too Deep - No Data
- + Non-navigable

**Map 6**

**Big Twin Lake**  
 Langlade County, Wisconsin  
**2011 PI Survey:**  
**Aquatic Vegetation**  
**Distribution**

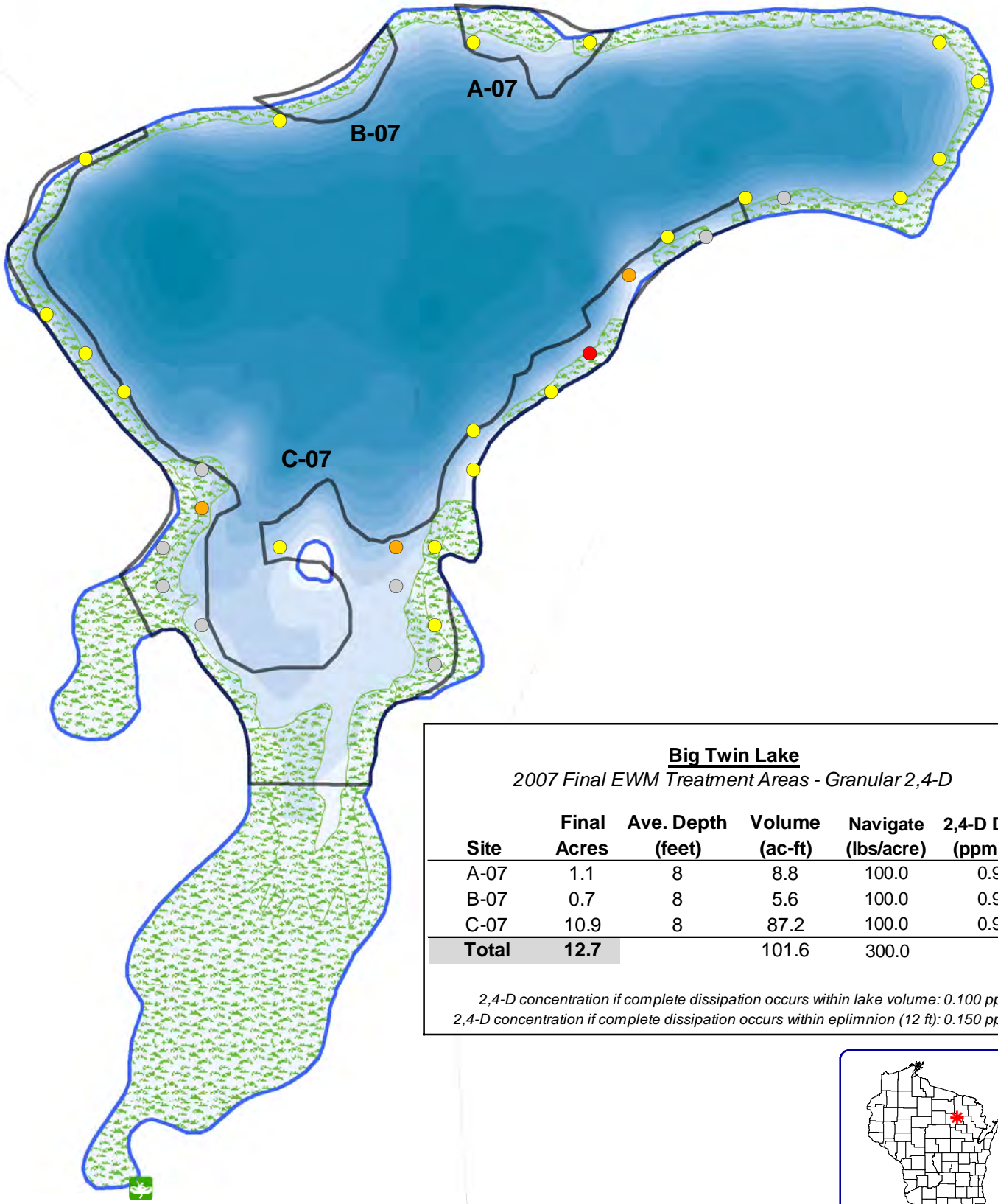


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Sources:  
 Hydro: WDNR  
 Aquatic Plants: Onterra, 2012  
 Orthophotography: NAIP, 2010  
 Map date: August 2, 2013  
 Filename: Map7\_BigTwin\_Comm.mxd

- Legend**
- Large Plant Communities**
- Emergent
  - Floating-leaf
  - Mixed Emergent & Floating-leaf
- Exotic Plant Communities**
- ◆ Purple loosestrife
- Small Plant Communities**
- Emergent
  - Floating-leaf
  - Mixed Emergent & Floating-leaf

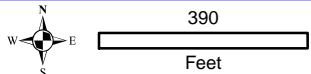
**Map 7**  
**Big Twin Lake**  
 Langlade County, Wisconsin  
**Emergent & Floating-leaf**  
**Aquatic Plant Communities**



**Big Twin Lake**  
2007 Final EWM Treatment Areas - Granular 2,4-D

Site	Final Acres	Ave. Depth (feet)	Volume (ac-ft)	Navigate (lbs/acre)	2,4-D Dose (ppm ae)
A-07	1.1	8	8.8	100.0	0.9
B-07	0.7	8	5.6	100.0	0.9
C-07	10.9	8	87.2	100.0	0.9
<b>Total</b>	<b>12.7</b>		101.6	300.0	

2,4-D concentration if complete dissipation occurs within lake volume: 0.100 ppm ae  
2,4-D concentration if complete dissipation occurs within epilimnion (12 ft): 0.150 ppm ae



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Sources:  
Roads and Hydro: WDNR  
Map Date: August 2, 2013  
Filename: Map8\_BigTwin\_T2007.mxd

**Point-intercept Location with EWM (WDNR 2006)**

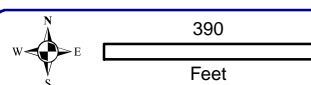
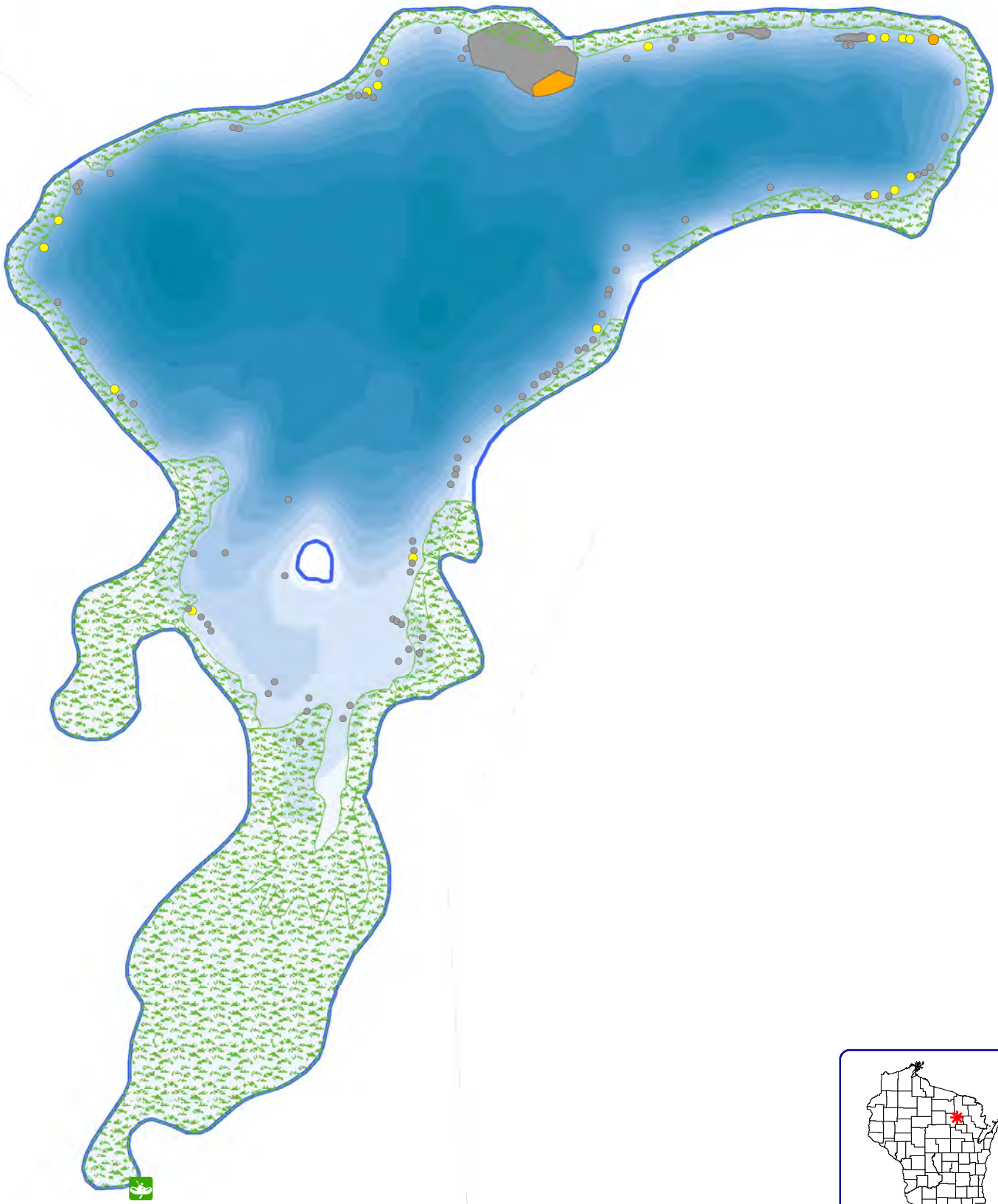
- Rake Fullness = 1
- Rake Fullness = 2
- Rake Fullness = 3
- Visual Observation

**Legend**

- 2007 Final EWM Treatment Area
- Emergent and/or Floating-leaf Plant Community

**Map 8**  
**Big Twin Lake**  
Langlade County, Wisconsin  
**2007 Final Treatment Areas**





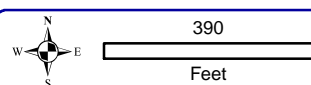
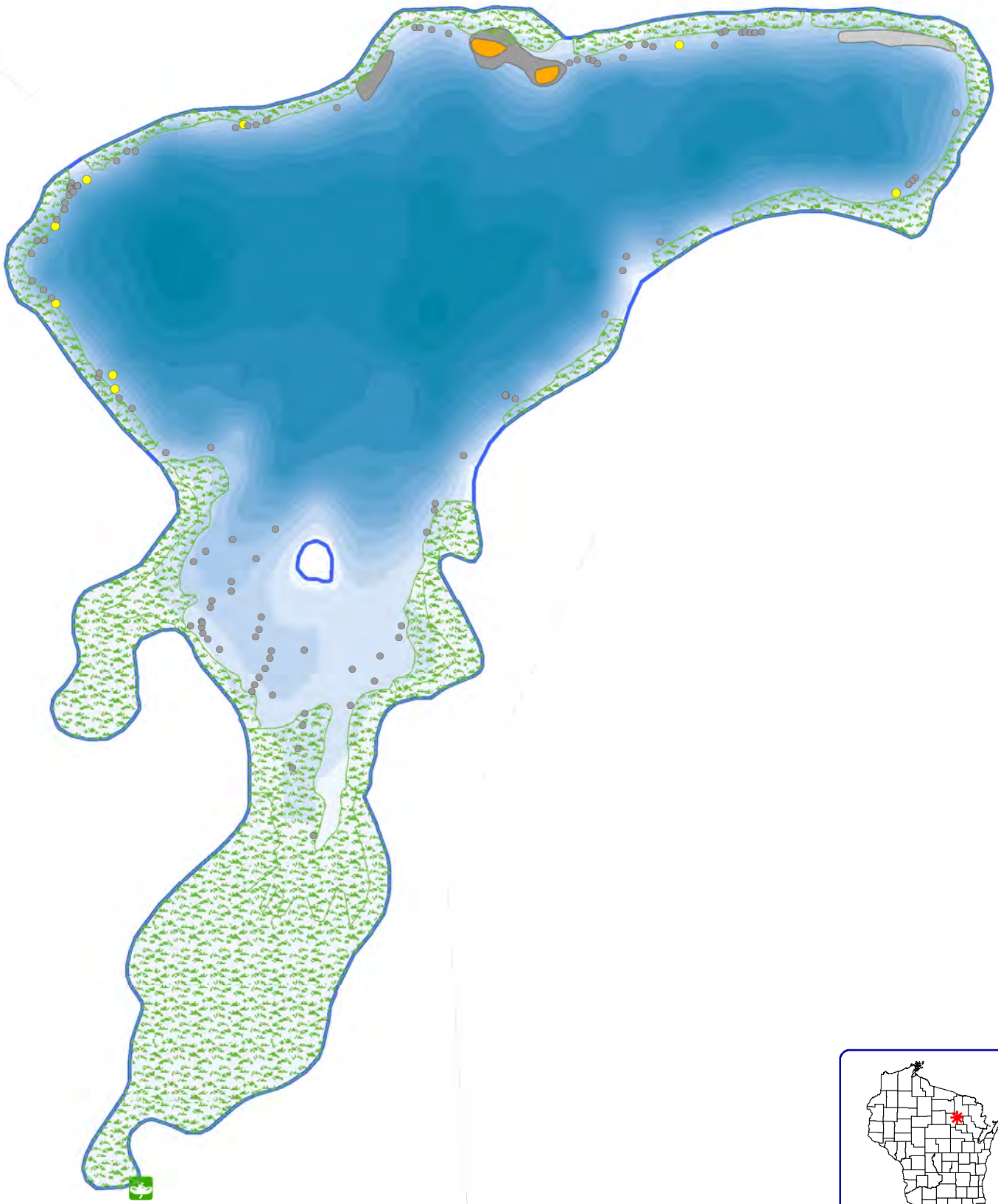
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Sources:  
 Roads and Hydro: WDNR  
 Aquatic Plants: Onterra, 2012  
 Map Date: August 2, 2013  
 Filename: Map9\_BigTwin\_EWM\_Summer12.mxd

- Legend**
- Eurasian water milfoil (August 2012)**
- Highly Scattered (None)
  - Scattered
  - Dominant (None)
  - Highly Dominant
  - Surface Matting (None)
  - Single or Few Plants
  - Clumps of Plants
  - Small Plant Colony

Emergent and/or Floating-leaf Plant Community

Map 9  
**Big Twin Lake**  
 Langlade County, Wisconsin  
**2012 EWM Locations**



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Sources:  
 Roads and Hydro: WDNR  
 Aquatic Plants: Onterra, 2013  
 Map Date: August 2, 2013  
 Filename: Map9\_BigTwin\_EWM\_Summer13.mxd

- Legend**
- Eurasian water milfoil (August 2013)**
- Highly Scattered
  - Scattered
  - Dominant (None)
  - Highly Dominant
  - Surface Matting (None)
  - Single or Few Plants
  - Clumps of Plants
  - Small Plant Colony

Emergent and/or Floating-leaf Plant Community

Map 10  
**Big Twin Lake**  
 Langlade County, Wisconsin  
**2013 EWM Locations**